

REMARKS

Claims 1-3, 5-8, and 13 are pending in this application. Claim 1 has been amended and new Claim 13 has been added. Claims 9-12 have been cancelled. Support for all amendments can be found in the specification as originally filed. For example, support for the amendment to independent Claim 1 (the throughput of the reactor) can be found on page 4, line 10 of the application as filed. No new matter has been added.

Interview

Applicants wish to thank the Examiner for the careful consideration given this application as well as the courteous telephone interview of July 17, 2007 and subsequent telephone conversations of September 6, 2007 and September 7, 2007. During the interview of July 17, 2007, Applicants' representatives explained the merits of the pending claims and Applicants' position that several aspects of independent Claim 1 are novel over the cited prior art. Applicants' representatives also described aspects of the invention that may be incorporated into independent Claim 1, which would provide additional aspects of the invention that are novel over the cited prior art. The Examiner said that he would consider Applicants' comments and would later call Applicants' representatives with additional comments and/or suggested claim amendments. During the telephone conversation of September 6, 2007, the Examiner and Applicants' representative reviewed the content of the Interview of July 17, 2007. The Examiner asked Applicants' representative to provide further information regarding the throughput of the compounding reactor which was supplied by Applicants' representative. In the communication of September 7, 2007, the Examiner explained that the pending claims would be allowable if the throughput of the compounding reactor was added to independent Claim 1. Additionally, the Examiner cited U.S. Patent No. 5,338,405 as describing a similar compounding reactor having throughput outside the range identified by the Applicants.

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Rejection under 35 U.S.C. § 103

Claims 1-3 and 5-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,851,463 to Guntherberg et al. (hereinafter "Guntherberg"). The Examiner alleges that Guntherberg discloses an extruder that is partially filled with water and, therefore, only partially filled with polymer, and that Guntherberg specifically discloses the use of heat to melt the polymer. Applicants respectfully disagree.

Guntherberg fails to disclose a process wherein the extruder is a partially filled reactor and Guntherberg fails to describe a process wherein thermal energy is added to the reactor in the claimed thermal to mechanical heat energy ratio, as recited in independent Claim 1 as set forth in the Response and Amendment of February 20, 2007.

First, Guntherberg is silent to the step of "partially filling" an extruder with the recited graft elastomer D) and a thermoplastic resin B). Nevertheless, the Examiner alleges that Guntherberg discloses "partially filling" an extruder with polymer, by disclosing completely filling an extruder with polymer containing residual water. The Examiner reasons that reactor is "partially filled with water and therefore only partially filled with polymer" (Office Action, page 3). Accordingly, the Examiner appears to equate "partially filling" with completely filling the reactor with a mixture of polymer and water, rather than leaving the reactor partially empty or filled with a gas. However, one of ordinary skill in the art would understand that "partially filling" a reactor means that a portion of the extruder is filled with a gas, not with water, otherwise the term would be redundant. For example, the graft elastomer D) clearly contains water, as Claim 1 recites that D) has a residual moisture content of 1 to 50 wt. %. Therefore, if "partially filling" meant partially filling with water, the compounding reactor would always be "partially" filled by virtue of "filling" the reactor with D) and B), thereby rendering the term "partially" superfluous. Hence, Guntherberg does not teach or suggest a partially filled extruder merely by disclosing that a polymer with a residual water content can be added to an extruder.

Further, Guntherberg merely suggests that heat may be added during compounding, but does not teach or suggest the claimed ratio of mechanical energy to thermal energy of 4:1 to 1:6. As discussed in the interview, less frictional heat evolves in a partially filled compounding reactor than a completely filled compounding reactor and, therefore, heat must be supplied to the compounding reactor via an external source to melt the components. Hence, one of ordinary skill in the art would not expect a completely filled reactor to utilize the same mechanical to thermal energy ratio as a partially filled reactor as recited in Claim 1.

Therefore, for at least these reasons, Guntherberg fails to disclose or even suggest every element of independent Claim 1 as set forth in the Response and Amendment of February 20, 2007 and fails to render this claim obvious.

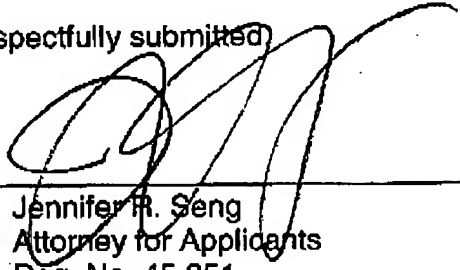
However, solely in the interest of advancing prosecution, Applicants have amended independent Claim 1 to recite that throughput of the compounding reactor is 5 kg/h per liter of processing capacity. In the telephone communication of September 7, 2007 the Examiner stated that this element is not suggested by Guntherberg and that the addition of this element to independent Claim 1 would place the pending claims in condition for allowance. Accordingly, by virtue of the amendment to independent Claim 1 provided hereinabove, the Examiner's rejection under 35 U.S.C. § 103(a) is rendered moot. As Claims 2, 3, 5-8 and 13 either directly or indirectly depend from and add further limitations to amended independent Claim 1, they are respectfully deemed allowable for at least the same reasons as amended independent Claim 1. Accordingly, Applicants respectfully assert that the claims meet the requirements of 35 U.S.C. § 103(a) and request that the rejections to pending claims be withdrawn.

The pending claims are now in condition for allowance and notice to such effect is respectfully requested. Should the Examiner have any questions regarding this application, the Examiner is invited to initiate a telephone conference with the undersigned at his convenience.

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Respectfully submitted

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